

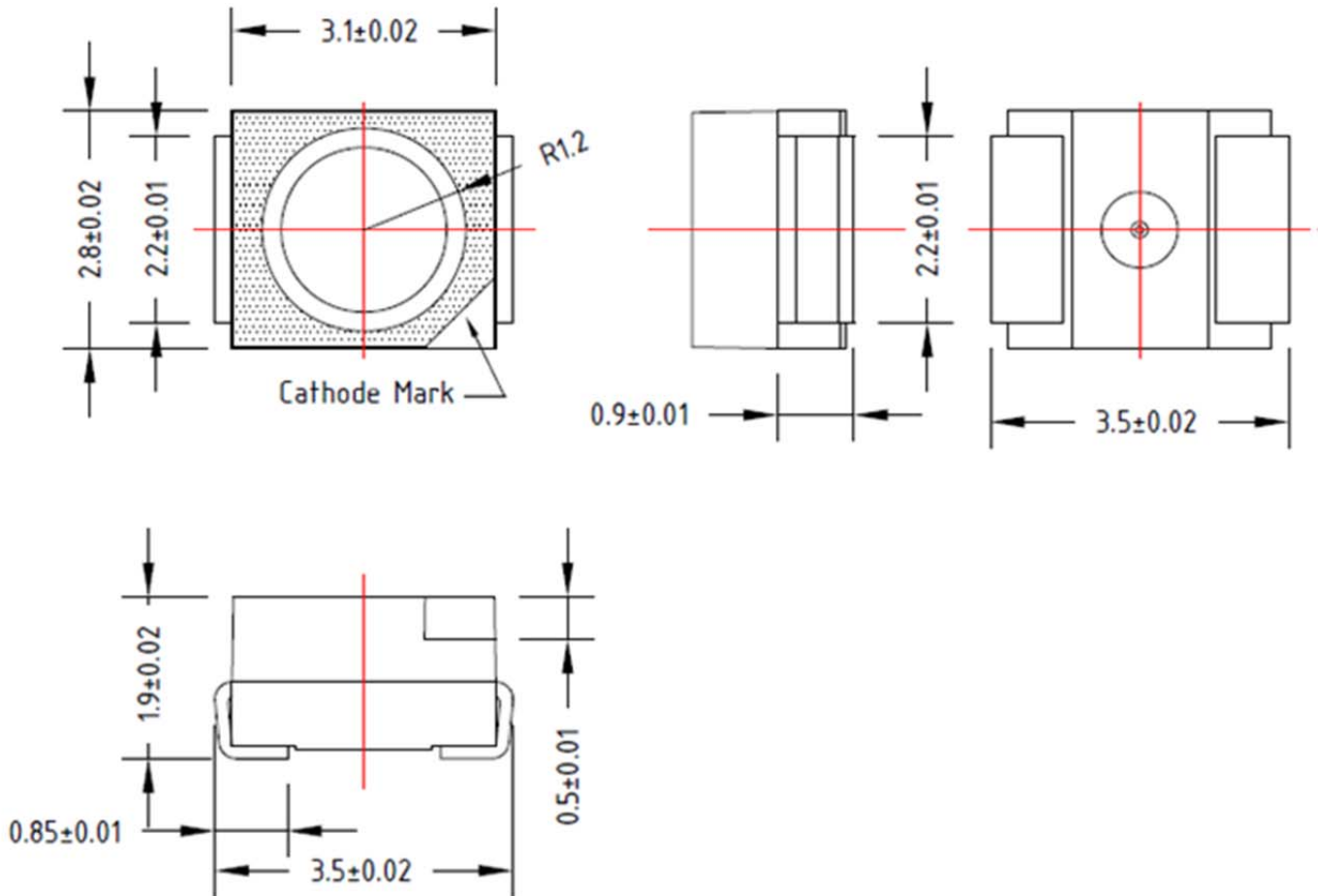


**American Opto Plus LED Corp.**  
**L955MWC-S**  
**3.5 X 2.8 X 1.9mm PLCC2**

**MAIN FEATURES:**

- Low current requirement
- Wide viewing angle
- IR Reflow Soldering
- I.C. compatible

**PACKAGE OUTLINES:**



Chip Material	Chip Emitted	Lens Color	Viewing Angle
InGaN	White	Yellow	120

**NOTES:**

1. All dimensions are in millimeters (inches);
2. Electrical Connection between all Cathodes is Recommended



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### ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

Parameter	Symbol	Max Rating	Unit
Power Dissipation	P <sub>D</sub>	105	mW
Pulse Forward Current (1/8 Duty Cycle @1KHz)	I <sub>PF</sub>	100	mA
Forward Current	I <sub>F</sub>	30	mA
Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature Range	T <sub>OPR</sub>	-30~+85	°C
Storage Temperature Range	T <sub>STG</sub>	-40~+100	°C
Solder Temperature	T <sub>SOL</sub>	265°C for 10 sec	

*IFP Conditions: Pulse Width ≤ 10msec and Duty ≤ 1/10*

### OPTICAL-ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Luminous Intensity	I <sub>v</sub>	I <sub>F</sub> = 20mA	1800	2300	2800	mcd
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 20mA	-	3.1	3.5	V
Chromaticity Coordinate	X	I <sub>F</sub> = 25mA	--	0.31	--	
Chromaticity Coordinate	Y	I <sub>F</sub> = 25mA	--	0.32	--	

Notes: Luminous intensity tolerance is ±10%



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### Luminous Intensity Bin Table

IF=20mA

Rank name	Min (mcd)	Max (mcd)
1	1800	2000
2	2000	2200
3	2200	2400
4	2400	2600
5	2600	2800

### Voltage Bin Table

IF=20mA

Rank name	Min (V)	Max (V)
A	2.9	3.0
B	3.0	3.1
C	3.1	3.2
D	3.2	3.3
E	3.3	3.4
F	3.4	3.5

※ Tolerance for each bin limit is  $\pm 0.5V$



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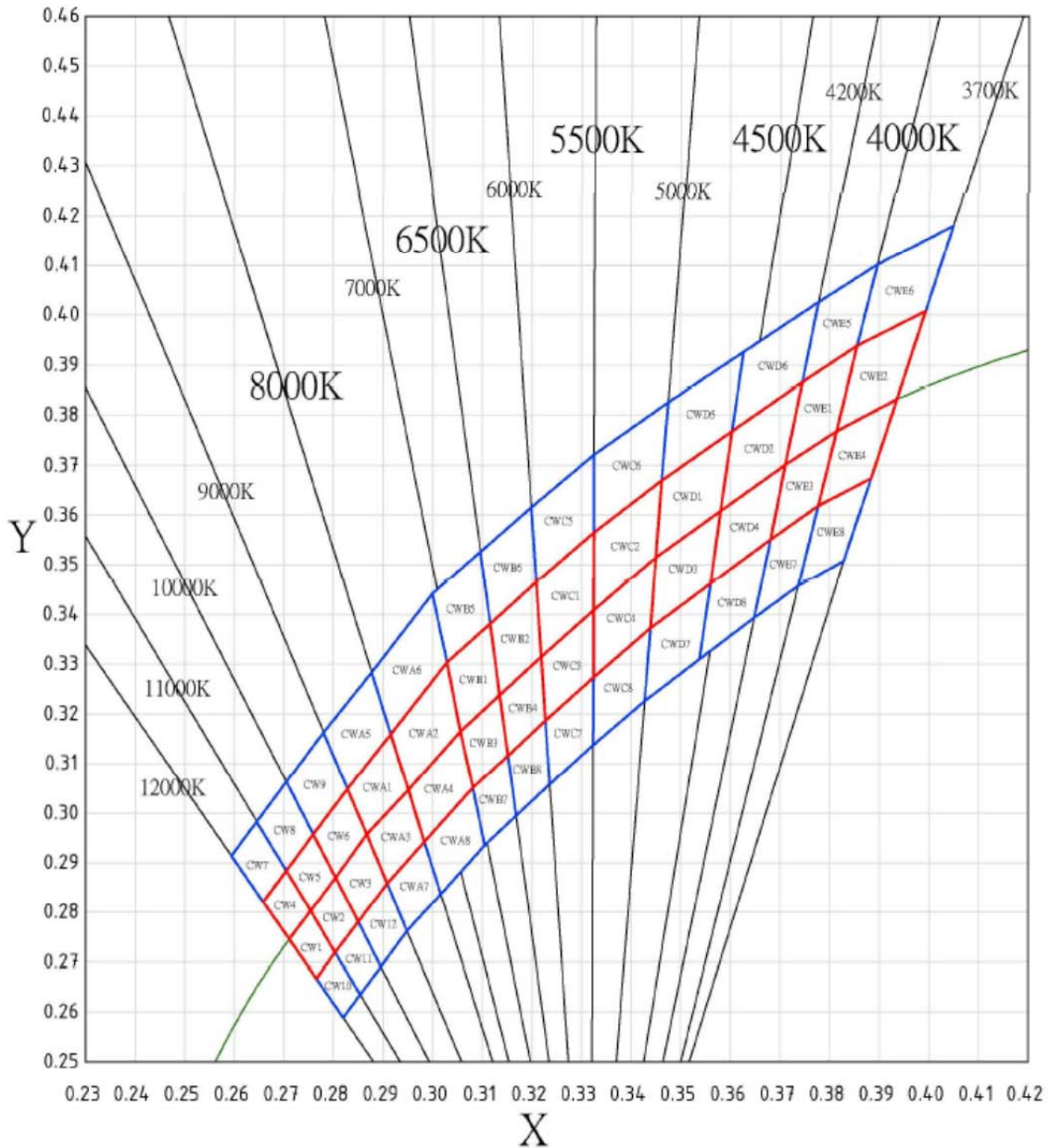
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## Chromaticity Diagram





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**Color Ranks**

<b>CW 1</b>					<b>CW 2</b>				
<b>x</b>	0.27650	0.27110	0.27540	0.28030	<b>x</b>	0.28030	0.27540	0.28040	0.28500
<b>y</b>	0.26670	0.27460	0.28030	0.27190	<b>y</b>	0.27190	0.28030	0.28700	0.27810
<b>CW 3</b>					<b>CW 4</b>				
<b>x</b>	0.28500	0.28040	0.28670	0.29080	<b>x</b>	0.27110	0.26580	0.27050	0.27540
<b>y</b>	0.27810	0.28700	0.29570	0.28590	<b>y</b>	0.27460	0.28210	0.28840	0.28030
<b>CW 5</b>					<b>CW 6</b>				
<b>x</b>	0.27540	0.27050	0.27590	0.28040	<b>x</b>	0.28040	0.27590	0.28280	0.28670
<b>y</b>	0.28030	0.28840	0.29570	0.28700	<b>y</b>	0.28700	0.29570	0.30490	0.29570
<b>CW 7</b>					<b>CW 8</b>				
<b>x</b>	0.26580	0.25940	0.26450	0.27050	<b>x</b>	0.27050	0.26450	0.27050	0.27590
<b>y</b>	0.28210	0.29140	0.29820	0.28840	<b>y</b>	0.28840	0.29820	0.30630	0.29570
<b>CW 9</b>					<b>CW 10</b>				
<b>x</b>	0.27590	0.27050	0.27800	0.28280	<b>x</b>	0.28190	0.27650	0.28030	0.28540
<b>y</b>	0.29570	0.30630	0.31630	0.30490	<b>y</b>	0.25890	0.26670	0.27190	0.26350
<b>CW 11</b>					<b>CW 12</b>				
<b>x</b>	0.28540	0.28030	0.28500	0.28950	<b>x</b>	0.28950	0.28500	0.29080	0.29480
<b>y</b>	0.26350	0.27190	0.27810	0.26900	<b>y</b>	0.26900	0.27810	0.28590	0.27620
<b>CWA1</b>					<b>CWA2</b>				
<b>x</b>	0.28670	0.28280	0.29150	0.29510	<b>x</b>	0.29510	0.29150	0.30290	0.30570
<b>y</b>	0.29570	0.30490	0.31590	0.30470	<b>y</b>	0.30470	0.31590	0.33040	0.31660
<b>CWA3</b>					<b>CWA4</b>				
<b>x</b>	0.29080	0.28670	0.29510	0.29830	<b>x</b>	0.29830	0.29510	0.30560	0.30810
<b>y</b>	0.28590	0.29570	0.30470	0.29420	<b>y</b>	0.29420	0.30470	0.31650	0.30510
<b>CWA5</b>					<b>CWA6</b>				
<b>x</b>	0.28280	0.27800	0.28770	0.29150	<b>x</b>	0.29150	0.28770	0.29990	0.30290
<b>y</b>	0.30490	0.31630	0.32840	0.31590	<b>y</b>	0.31590	0.32840	0.34420	0.33040
<b>CWA7</b>					<b>CWA8</b>				
<b>x</b>	0.29480	0.29080	0.29830	0.30160	<b>x</b>	0.30160	0.29830	0.30810	0.31050
<b>y</b>	0.27620	0.28590	0.29420	0.28370	<b>y</b>	0.28370	0.29420	0.30510	0.29350
<b>CWB1</b>					<b>CWB2</b>				
<b>x</b>	0.30560	0.30290	0.31160	0.31350	<b>x</b>	0.31350	0.31160	0.32090	0.32190
<b>y</b>	0.31650	0.33040	0.33820	0.32380	<b>y</b>	0.32380	0.33820	0.34650	0.33150



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<b>CWB3</b>					<b>CWB4</b>				
<b>x</b>	0.30810	0.30570	0.31350	0.31520	<b>x</b>	0.31520	0.31350	0.32190	0.32270
<b>y</b>	0.30510	0.31660	0.32380	0.31160	<b>y</b>	0.31160	0.32380	0.33150	0.31870
<b>CWB5</b>					<b>CWB6</b>				
<b>x</b>	0.30290	0.29990	0.30960	0.31160	<b>x</b>	0.31160	0.30960	0.31990	0.32090
<b>y</b>	0.33040	0.34420	0.35260	0.33820	<b>y</b>	0.33820	0.35260	0.36160	0.34650
<b>CWB7</b>					<b>CWB8</b>				
<b>x</b>	0.31050	0.30810	0.31520	0.31680	<b>x</b>	0.31680	0.31520	0.32270	0.32360
<b>y</b>	0.29350	0.30510	0.31160	0.29950	<b>y</b>	0.29950	0.31160	0.31870	0.30580
<b>CWC1</b>					<b>CWC2</b>				
<b>x</b>	0.32190	0.32090	0.33250	0.33240	<b>x</b>	0.33240	0.33250	0.34620	0.34500
<b>y</b>	0.33150	0.34650	0.35650	0.34090	<b>y</b>	0.34090	0.35650	0.36700	0.35150
<b>CWC3</b>					<b>CWC4</b>				
<b>x</b>	0.32270	0.32190	0.33240	0.33240	<b>x</b>	0.33240	0.33240	0.34500	0.34390
<b>y</b>	0.31870	0.33150	0.34090	0.32740	<b>y</b>	0.32740	0.34090	0.35150	0.33730
<b>CWC5</b>					<b>CWC6</b>				
<b>x</b>	0.32090	0.31990	0.33250	0.33250	<b>x</b>	0.33250	0.33250	0.34750	0.34620
<b>y</b>	0.34650	0.36160	0.37210	0.35650	<b>y</b>	0.35650	0.37210	0.38260	0.36700
<b>CWC7</b>					<b>CWC8</b>				
<b>x</b>	0.32360	0.32270	0.33240	0.33230	<b>x</b>	0.33230	0.33240	0.34390	0.34270
<b>y</b>	0.30580	0.31870	0.32740	0.31370	<b>y</b>	0.31370	0.32740	0.33730	0.32260
<b>CWD1</b>					<b>CWD2</b>				
<b>x</b>	0.34500	0.34620	0.36035	0.35805	<b>x</b>	0.35805	0.36035	0.37450	0.37110
<b>y</b>	0.35150	0.36700	0.37680	0.36080	<b>y</b>	0.36080	0.37680	0.38660	0.37010
<b>CWD3</b>					<b>CWD4</b>				
<b>x</b>	0.34390	0.34500	0.35805	0.35600	<b>x</b>	0.35600	0.35805	0.37110	0.36810
<b>y</b>	0.33730	0.35150	0.36080	0.34620	<b>y</b>	0.34620	0.36080	0.37010	0.35510
<b>CWD5</b>					<b>CWD6</b>				
<b>x</b>	0.34620	0.34750	0.36265	0.36035	<b>x</b>	0.36035	0.36265	0.37780	0.37450
<b>y</b>	0.36700	0.38260	0.39260	0.37680	<b>y</b>	0.37680	0.39260	0.40260	0.38660
<b>CWD7</b>					<b>CWD8</b>				
<b>x</b>	0.34270	0.34390	0.35600	0.35375	<b>x</b>	0.35375	0.35600	0.36810	0.36480
<b>y</b>	0.32260	0.33730	0.34620	0.33100	<b>y</b>	0.33100	0.34620	0.35510	0.33940



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CWE1					CWE2				
x	0.37110	0.37450	0.38560	0.38140	x	0.38140	0.38560	0.39940	0.39360
y	0.37010	0.38660	0.39390	0.37680	y	0.37680	0.39390	0.40080	0.38320
CWE3					CWE4				
x	0.36810	0.37110	0.38140	0.37770	x	0.37770	0.38140	0.39360	0.38840
y	0.35510	0.37010	0.37680	0.36190	y	0.36190	0.37680	0.38320	0.36740
CWE5					CWE6				
x	0.37450	0.37780	0.38970	0.38560	x	0.38560	0.38970	0.40500	0.39940
y	0.38660	0.40260	0.41020	0.39390	y	0.39390	0.41020	0.41800	0.40080
CWE7					CWE8				
x	0.36480	0.36810	0.37770	0.37370	x	0.37370	0.37770	0.38840	0.38280
y	0.33940	0.35510	0.36190	0.34580	y	0.34580	0.36190	0.36740	0.35070

### Note

1. One delivery will include several color ranks and  $I_v$  ranks of products.  
The quantity-ratio of the different rank is decided by AOP
2. Color Coordinates Measurement Allowance is  $\pm 0.01$
3. 2000 pcs per reel.



# American Opto Plus LED Corp.

## L955MWC-S

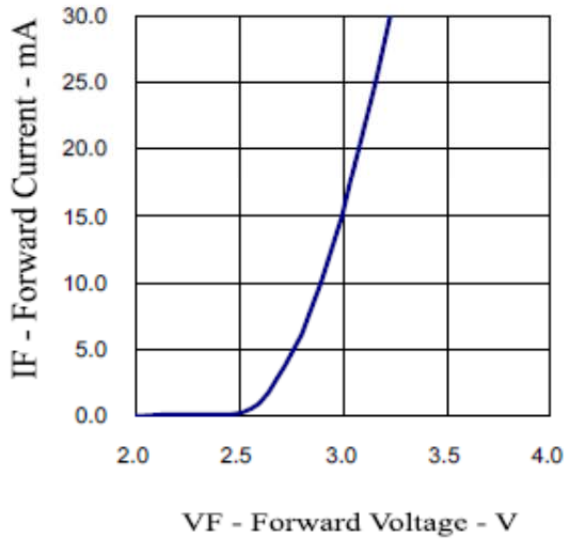
3.5 X 2.8 X 1.9mm PLCC2

### MAIN FEATURES:

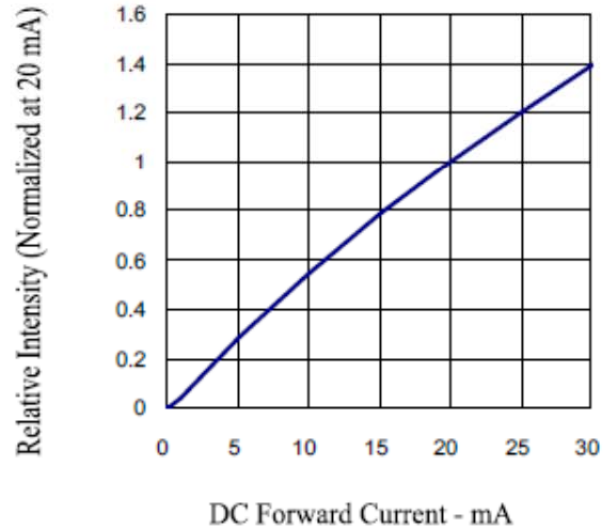
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## OPTICAL CHARACTERISTIC CURVES:

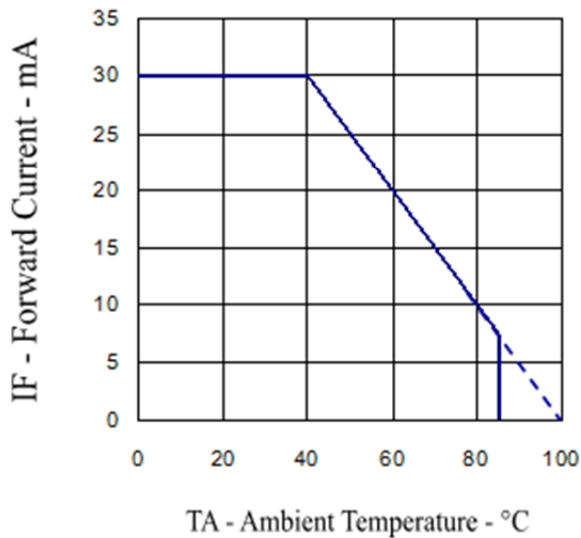
Forward Current vs. Forward Voltage



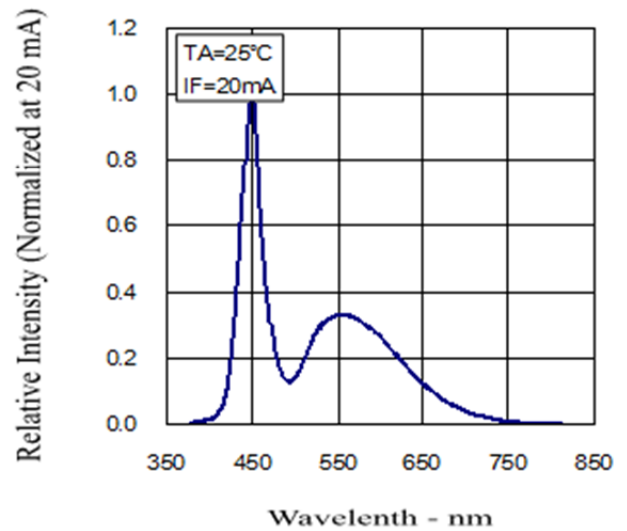
Relative Intensity vs. Forward Current



Forward Current vs. Ambient Temperature



Relative Intensity vs. Wavelength







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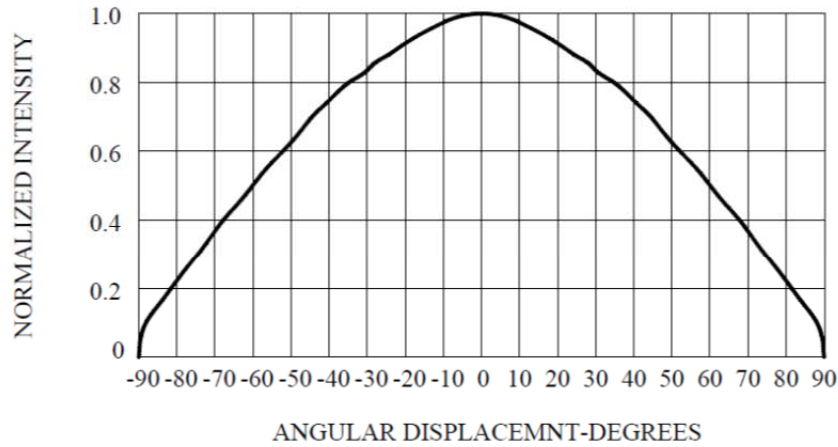
## L955MWC-S

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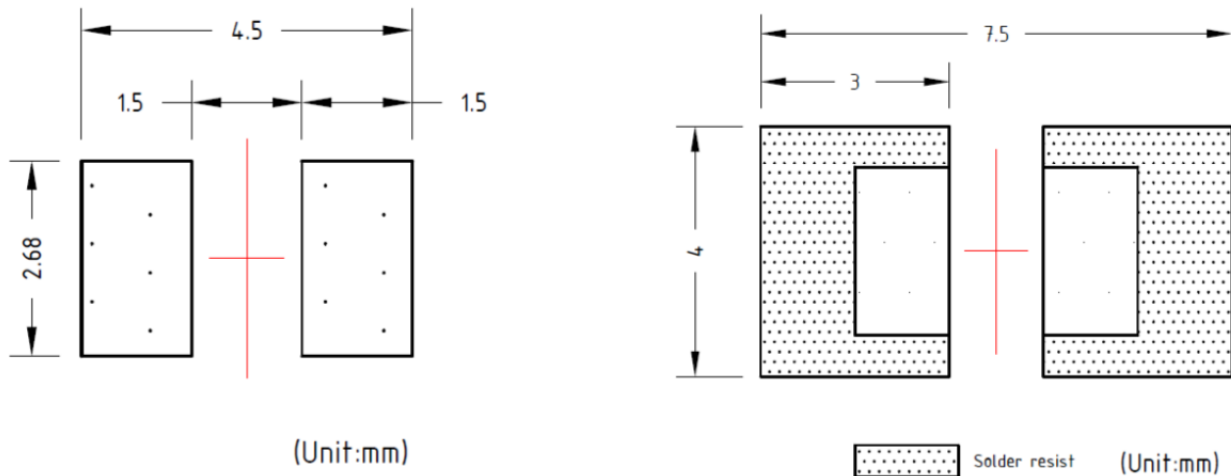
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## Radiation Pattern



## Recommended Soldering Pad Pattern



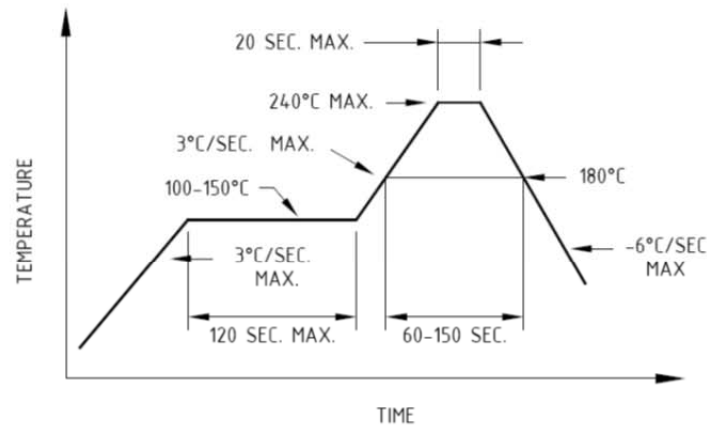


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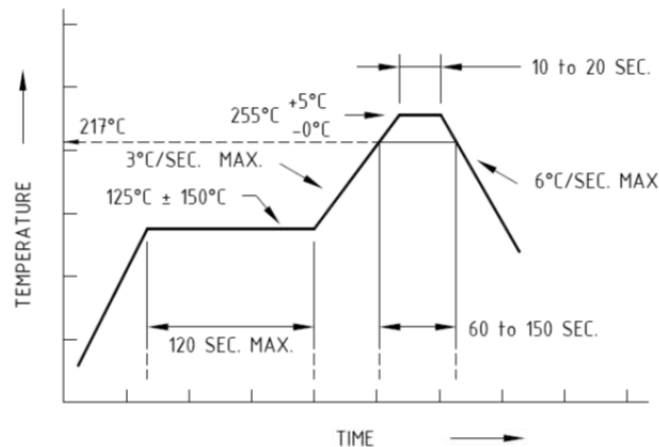
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**Soldering Conditions:**



**Recommended reflow soldering profile**



**Recommended Pb-free reflow soldering profile**

- Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used. It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.
- Reflow soldering should not be done more than two times.
- When soldering, do not put stress on the LEDs during heating.
- After soldering, do not warp the circuit board.



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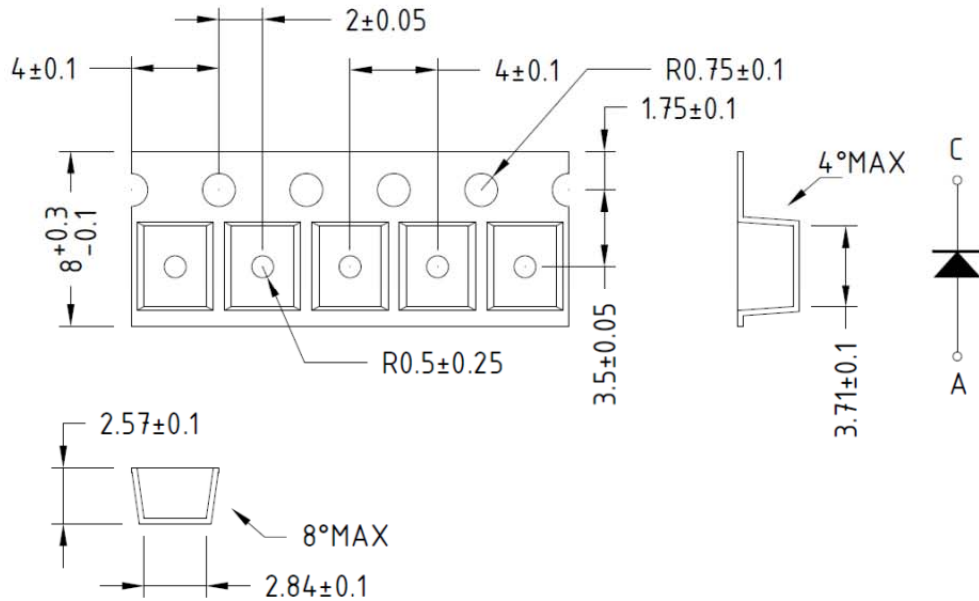
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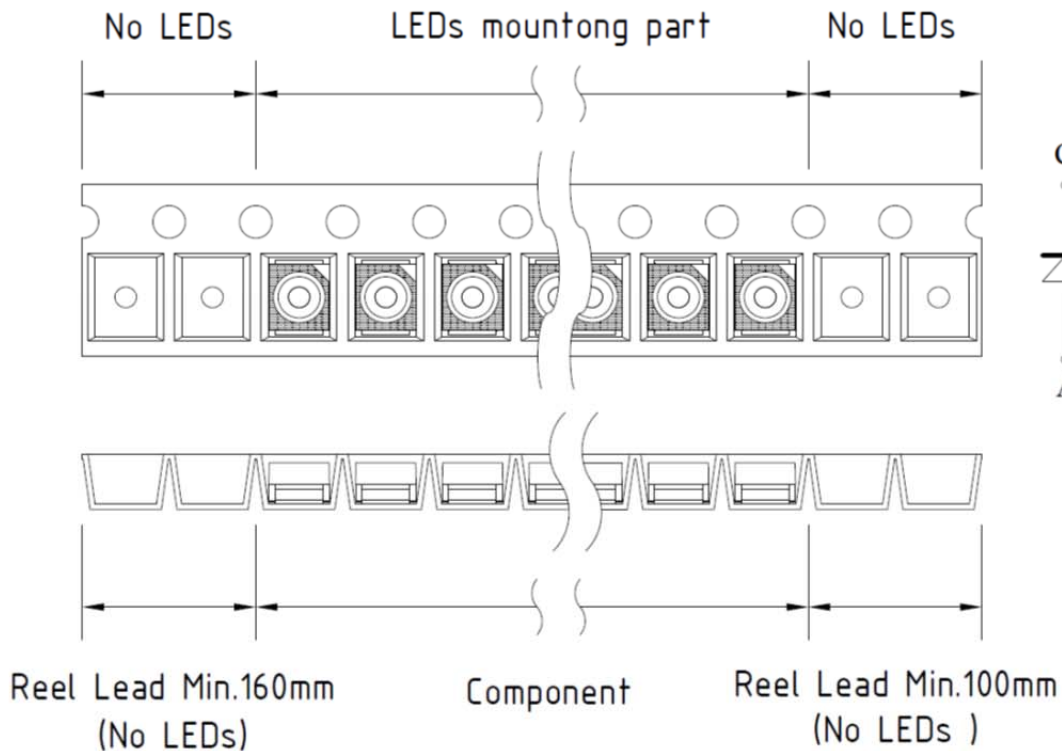
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## Tape Dimension



## Tape Leader and Trailer Dimension



USER FEED DIRECTION 

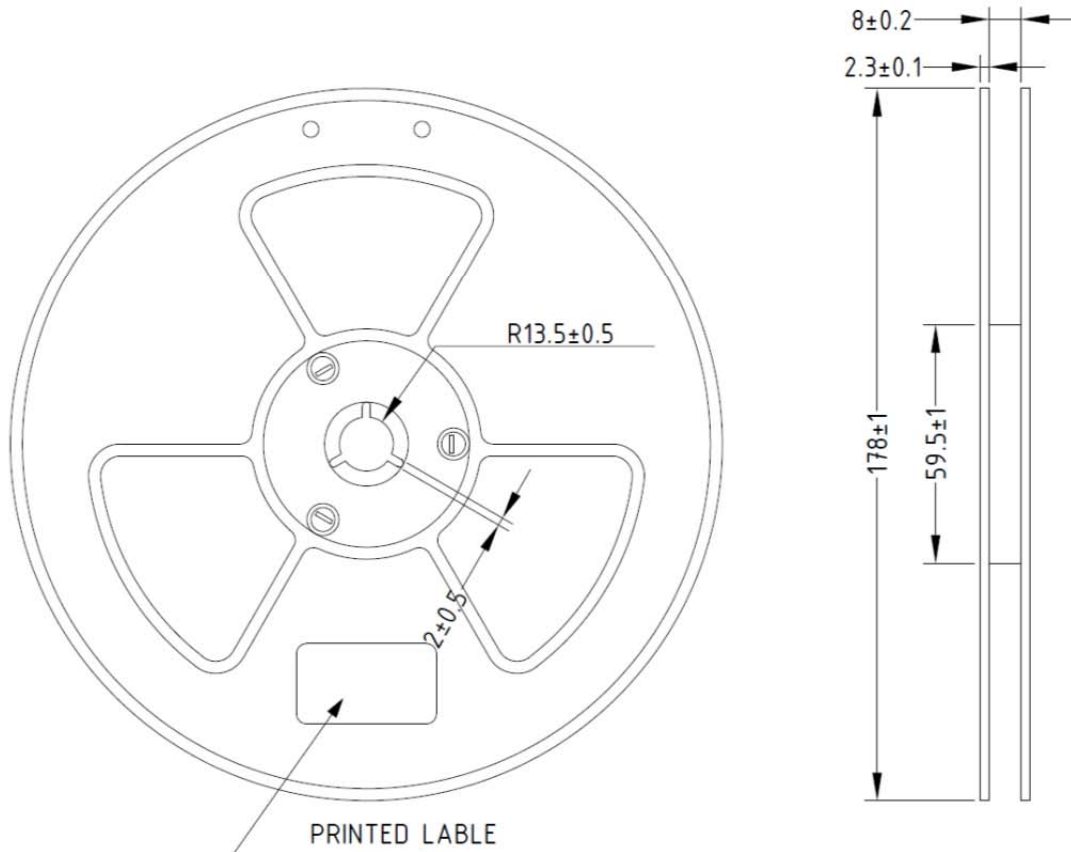


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**Reel Dimension**



**Note:** Baking is required under the following conditions:

The pack has been opened for more than four weeks.

Baking recommended conditions:

$60 \pm 5$  °C for 20 hours.



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## Moisture Sensitivity

AOP's SMD LED are shipped in sealed, moisture-barrier bags (MBB) designed for long shelf life. If SMD LED has exposed with moist environments before soldering, this may cause damage to SMD LED during soldering (reflow) operation.

## Storage / Floor Time

Condition	Temperature(C)	Humidity(RH)	Period of Time
Before Open	30	60	1 year from shipping date
After Open	30	60	Within 72 hours

- MSL of this product are MSL4, please see IPC/JEDEC STD020D for more detail.
- LEDs reach floor time may be damaged while soldering/reflow processing, please bake the LEDs before use.
- If RH indicator card show 60% RH when unseal the package, please bake/discard the LED.

## Reseal

- AOP's aluminum MBB may reuse as to reseal the unused LED of MBB has not damaged or had any holes in it.
- Moisture absorbent material (silica gel) may be reuse if it does not become pink.
- Proper resealed LED's floor time will NOT RESET, only stop counting until open.
- If RH indicator card show 60% RH when open the package, please bake/discard the LED.

## Baking

Condition	Temperature(C)	Period of Time
With Reel	60	More then 24 hours, but not more then 48 hours
Without Reel	90	24 hours

- Baking of LED available ONCE only, more than once may damage the LEDs while baking.
- Baking only required when LED reach it's floor time.